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Abstract

The prime aim of this set of studies was to test the disposition to play (playfulness) in adults in its relation with various measures of personality but also ability (self-estimated but also psychometrically measured ingenuity). Study 1 (n = 180) shows that adults playfulness relates primarily to extraversion, lower conscientiousness, and higher endorsements of culture; joy of being laughed at (gelotophilia) and agreeableness were also predictive in a regression analysis; Study 2 (n = 264) shows that playfulness relates primarily to a high expectation of intrinsic and a low expectation of extrinsic goals as well as greater intrinsic and lower extrinsic importance of goals (for expressive and fun-variants of playfulness); Study 3 (n = 212) shows that playfulness relates to greater self-perception of one's degree of ingenuity and psychometric ingenuity correlated primarily with greater spontaneous and creative variants of playfulness (in about the same range for origence and fluidity of the productions). Overall, the findings were in line with the expectations and could stimulate further studies of playfulness in adults.

Key words: adult playfulness; divergent thinking; life goals; life satisfaction; well-being

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A set of three studies has been designed for contributing to the basic understanding of playfulness in adults. This is an understudied field in psychology and related disciplines – most certainly in comparison to research on play and playfulness in children. The emergence of *positive psychology* has stimulated research in variables that may contribute to positive psychological functioning and well-being and it is argued that playfulness may have such a function in adults.

Although there are efforts for structuring the field (e.g., Apter, 1982; Barnett, 1990, 2007; Bundy, 1993; Guitard et al., 2005; Proyer, in press), a consensual theory of adult playfulness is missing. In the present studies, playfulness is understood as the predisposition to engage in playful activities and interactions (Barnett, 1991ab). Barnett (2007) defines playfulness as: "[…] the predisposition to frame (or reframe) a situation in such a way as to provide oneself (and possibly others) with amusement, humor, and/or entertainment. Individuals who have such a heightened predisposition are typically funny, humorous, spontaneous, unpredictable, impulsive, active, energetic, adventurous, sociable, outgoing, cheerful, and happy, and are likely to manifest playful behavior by joking, teasing, clowning, and acting silly" (p. 955).

In comparison with studies on children (e.g., Barnett, 1990, 1991ab; Lieberman, 1977), only a comparatively few number of studies has dealt with playfulness in *adults*. Of these, robust relations between playfulness and greater inclination to flow-experiences (Csikszentmihalyi, 1975), intrinsic motivation (Amabile et al., 1994), instrumental and expressive traits (Bozionelos & Bozionelos, 1999), quality of life (Proyer et al., 2010), higher intellectual and emotional strengths of character but lower strengths of restraint (Proyer & Ruch, 2011), creativity and spontaneity (Barnett, 2007; Glynn & Webster, 1992, 1993), stress coping (Qian & Yarnal, 2011), positive attitudes towards the workplace (Glynn & Webster 1992, 1993; Yu et al., 2007), job satisfaction and performance, innovative behavior (Yu et al., 2007), and academic achievement (Proyer, 2011) have been reported. Thus, there is evidence that playfulness as a personality characteristic may play an important role amongst adults.

Assessing adult playfulness. There is a lack of consensus on how to measure playfulness in adults. Different measures exist and one frequently used instrument is Glynn and Webster's (1992) *Adult Playfulness Scale,* which allows testing five different facets of playfulness. The dimensions are *spontaneous* (e.g., impulsive, carefree), *expressive* (e.g., bouncy, open), *fun* (e.g., excitable, bright), *creative* (e.g., imaginative, passive), and *silly* (e.g., childlike, whimsical). An advantage of this instrument is that it allows scoring for a total score and five subscales that help describe the correlates of different variants of playfulness. The APS has been used in all of the studies described here. Additionally, the *Short Measure of Adult Playfulness* (SMAP; Proyer, 2012) has been used for the assessment of the global, cognitive aspect of playfulness. Higher scores in the SMAP indicate an easy onset and high intensity of playful experiences along with the frequent display of playful activities.

Three studies were conducted to test (a) personality correlates of playfulness in adults (in terms of the Big Five); (b) its relation to positive psychological functioning (life satisfaction and orientations to happiness); (c) its relations with humor and laughter in terms of

three dispositions towards ridicule and being laughed at); (d) intrinsic and extrinsic life goals; and (e) the self-perception of one's degree of ingenuity and psychometric (objectively tested) ingenuity (creativity). Study 1 covers topics (a) to (c); Study 2 deals with topic (d) and Study (3) addresses (e). The APS has been used in study 1 to 3. Since the SMAP has not been available at the time study 1 has been planned and conducted, it has only been used in studies 2 and 3.

Personality correlates of adult playfulness. Studies with children (Barnett, 1991ab) but also work conducted with adults (e.g., Glynn & Webster, 1992, 1993; Proyer, 2012) allow deriving hypotheses on the personality correlates for playfulness in adults. Barnett's (2007; see also Barnett, 2011) definition of playfulness and the characteristics given there to describe a playful adult suggest a picture of a person that is rather extraverted, emotionally stable, and agreeable. Further expectations derived from literature are higher openness towards new experiences (or: culture) and lowered conscientiousness among playful adults. The latter assumptions are supported, for example, by data from Glynn and Webster (1993) who found a correlation of $r(548) = -.36$ to *orderly personality* and of .26 to *innovative attitudes* (all $p = .000$) in a sample of highly intelligent adults.

Playfulness and positive psychological functioning. It has been argued that play and playfulness in adults may facilitate the experience of positive emotions (Fredrickson, 1998, 2001) or positive states such as flow-experiences (Csikszentmihalyi, 1975). Among the indicators of playfulness in young adults, Barnett (2007) lists cheerful and happy. A positive relation between playfulness and life satisfaction was expected. Proyer, Ruch, and Müller (2010) found a positive relation between playfulness for various indicators of *quality of life* in a sample of elderly people. However, as life satisfaction is only one facet of the subjective *well being* a closer look at different facets is warranted. For example, playfulness has previously not been studied in relation to different *orientations towards a good life*. Peterson, Park, and Seligman (2005) describe three distinct routes to happiness: (a) the life of *pleasure* (hedonism); (b) the life of *engagement* (related to flow-experiences); and (c) the life of *meaning* (eudemonia). One might assume that having a playful attitude towards life facilitates seeking pleasures and engaging oneself in activities that enable the experience of flow (the engaged life). While, using ones strengths and talents for a greater good (the *meaningful* life) should not necessarily be related to playfulness. It was further expected that engagement also relates to greater activity and an energetic stance towards daily life, as listed by Barnett (2007) as indicators of playfulness.

Playfulness and dealing with humor and laughter. McGhee (1996) considers humor to be a special variant of playfulness – the play with ideas. In study 1, it was tested whether the way people deal with humor and laughter contributes to the expression of playfulness. Ruch and Proyer (2008, 2009) describe three dispositions in dealing with humor and laughter of others; namely, (a) the fear of being laughed at (*gelotophobia*); (b) the joy of being laughed at (*gelotophilia*); and (c) the joy of laughing at others (*katagelasticism*). Gelotophobes fear being laughed at and appearing ridiculous to others. Although exhibiting playfulness per se does not indicate the risk of being laughed at, one might argue that specific variants of playfulness (e.g., word plays, joking around, etc.) may enhance the risk of being laughed at. It was expected that greater playfulness relates to lower inclina-

tions of fearing to be laughed at. Gelotophiles actively seek and establish situations in which they can make others laugh at them, they do not refrain from telling embarrassing stories or incidents that happened to them for making others laugh. Katagelasticists actively seek and establish situations, in which they can laugh at others, they do not feel bad when doing so but think that those who do not enjoy being laughed at should just fight back. Gelotophilia is associated with playful behavior such as joking, teasing, clowning, and acting silly. This fits well to earlier ideas as, for example, Lieberman (1977) lists the ability of *making fun of oneself* as a part of social-emotional playfulness. Therefore, positive relations are expected with primarily gelotophilia. However, one might assume that playful people would not refrain from playfully teasing others – and sometimes might overdo it. Thus, positive but numerically lower relations with katagelasticism are also expected.

Intrinsic and extrinsic life goals and playfulness. To the best knowledge of the author, adult playfulness has not yet been tested in its relation with a classification of intrinsic and extrinsic life goals. Kasser and Ryan (1993, 1996) suggest, "extrinsic goals, such as financial success, are those that depend on the contingent reactions of others. Further, they are typically engaged in as means to some other end. Conversely, intrinsic goals, such as self-acceptance, are expressive of desires congruent with actualizing and growth tendencies natural to humans. As such, intrinsic goals are likely to satisfy basic and inherent psychological needs" (1996, p. 280). From a self-determination theory-perspective these needs are autonomy, relatedness, competence, and growth (Deci & Ryan, 1985). Intrinsic goals (and attainment to them) were also shown to benefit well being (e.g., Niemiec, Ryan, & Deci, 2009). Furthermore, Kasser and Ryan (1993, 1996) distinguish between (a) the importance for the person that a specific goal will happen and (b) the likelihood that this will happen.

Already Dewey (1913) described the intrinsic nature of play when he stated that play encompasses activities "which are not consciously performed for the sake of any result beyond themselves; activities which are enjoyable in their own execution without reverence to ulterior purpose" (p. 725). As playfulness is seen as intrinsically motivated (see Amabile et al., 1994; Berlyne, 1960; Bundy, 1993; van der Kooij, 1989), it was expected to demonstrate robust positive relations with intrinsic life goals. Furthermore, it was expected that greater playfulness relates to valuing the importance as well as the likelihood of intrinsic goals to occur. Extrinsic goals should be of lesser importance for playful adults. Nevertheless, it was expected that the higher perceived likelihood of extrinsic life goals should be related with playfulness. Furthermore, it was hypothetisized that exhibiting fun-variants of playful behavior may also be directed towards a specific aim; for example, for being perceived in a special way – e.g., as being eccentric, extravagant, interesting, or attractive. Thus, there may be an extrinsic gain in this kind of behavior. Exhibiting silly-variants of playfulness is expected to be unrelated from life-goals. This variant is most likely related to short-term intrinsic satisfaction but does not necessarily need to relate to any long-term aspirations. The intrinsic nature of playfulness should, as already mentioned, make flow-experiences more likely to occur and enable the experience of positive emotions.

Adult playfulness and divergent thinking. Recently, Proyer (2011) found playfulness in young adults to be widely *unrelated* from self-estimated and psychometric intelligence. In his sample of psychology undergraduates, playfulness correlated with better academic performance and the students' free choice of doing extra-work that was not necessary for passing an exam. However, in this study, only measures of *convergent* thinking were used (verbal, numerical and figural intelligence and memory) and it was argued that playfulness in adults should also be tested in relation to self-estimated and psychometrically measured *divergent* thinking. This call has been based on both theoretical assumptions (see e.g., Chapman, 1978; March, 1976; Sutton-Smith, 1967) but also on empirical studies (again most of these have been conducted with children). For example, Barnett and Kleiber (1982, 1984) found relations of playfulness in children with divergent thinking with gender being a mediating variable (see also Dansky & Silverman, 1973; Lieberman, 1965, 1977; Rossman & Horn, 1972; Taylor & Rogers, 2001; Truhon, 1983).

In this study, psychometrically measured and self-estimated ingenuity were tested and, additionally, the aspects of the *frequency* (number of the productions) and the *origence* (uniqueness of the productions) of verbal, numeric, and figural productions were considered. Playfulness in adults was expected to relate positively to psychometrically measured and self-estimated ingenuity. Especially, facets of playfulness that are directly linked to ingenuity (i.e., its creative and spontaneous variants) should demonstrate positive relations.

Main aims of the present study. It has been stressed out that there is a lack of research in playfulness in adults. The overarching aim of the three studies was adding to the knowledge in the field by studying adult playfulness in its relation with a diverse range of other variables. Study 1 was aimed at describing personality correlates of adults playfulness along with correlates of three dispositions towards ridicule and being laughed at, and several indicators of positive psychological functioning (i.e., life satisfaction and orientations to happiness). In study 2, the relation of life aspirations (the importance and likelihood of intrinsic and extrinsic goals) with adult playfulness was tested. Finally, study 3 was aimed at testing whether greater playfulness in adults relates to greater psychometrically measured performance in a test for ingenuity but also with self-estimates of the own ingenuity.

Study 1

Method

Sample

The sample consisted of 180 adults (84 males and 96 females) from 18 to 81 years (M = 37.0, SD = 15.3). More than three quarters (78.9 %) were employed and 16.7 % were not working (e.g., retired or unemployed; 4.4 % left the answer blank). The largest group (38.9 %) had full vocational training, 13.3 % were students, and 23.3 % held a degree from a university.

Instruments

The *Adult Playfulness Scale* (APS; Glynn &Webster, 1992) is a 32-item adjective list of which 25 items are being scored on a 7-point scale. In this study a total score and additionally, five subscales were computed; namely, *spontaneous* (e.g., spontaneous vs. disciplined, impulsive vs. diligent), *expressive* (e.g., bouncy vs. staid, open vs. reserved), *fun* (e.g., bright vs. dull, excitable vs. serene), *creative* (e.g., imaginative vs. unimaginative, active vs. passive), and *silly* (e.g., childlike vs. mature, whimsical vs. practical). Glynn and Webster report alpha-coefficients between .73 and .83 for the five scales and results from a principal component analysis (rotated to the Varimax-criterion) in which the five extracted factors explained 57.5 % of the variance. Furthermore, they provide data on convergent and predictive validity, which has been supported in further studies (e.g., Amabile et al., 1994; Bozionelos & Bozionelos, 1997, 1999; Fix & Schaefer, 2005). As in Proyer (in press, 2011, 2012) the German version of the scale has been used. In this study, alpha-coefficients were .88 for the total score and yielded a mean of .68 for the five subscales.

The *Inventory of minimal redundant scales* (MRS-45; Ostendorf, 1990; Ostendorf & Angleitner, 1992) is a bipolar list of 45 adjectives for the assessment of *extraversion* (e.g., impulsive vs. restraint), *agreeableness* (e.g., affirmative vs. oppositional), *conscientiousness* (e.g., diligent vs. lazy), *emotional stability* (e.g., robust vs. vulnerable), and *culture* (e.g., inventive vs. conventional). Answers are given on a six-point scale (*very – quite – rather* for each of the poles). The authors report high internal consistencies and provide support for its validity. The scale is frequently used in the German language area for an economic assessment of the dimensions of the five-factor model (e.g., Dormann & Kaiser, 2002; Elfering et al., 2000; Hülsheger & Maier, 2010). Alpha-coefficients in this sample were between .80 (A) and .91 (ES) with a median of .86.

The *PhoPhiKat-45* (Ruch & Proyer, 2009a) is a 45-item questionnaire for the assessment of *gelotophobia* ("When they laugh in my presence I get suspicious"), *gelotophilia* ("When I am with other people, I enjoy making jokes at my own expense to make the others laugh"), and *katagelasticism* ("I enjoy exposing others and I am happy when they get laughed at"; 15 items each). Answers are given on a four-point scale (1 = *strongly disagree*, 4 = *strongly agree*). Ruch and Proyer report high reliability coefficients (alphas ≥ .84) and retest-reliabilities (≥ .77 and ≥ .73 for a three and six months). The PhoPhiKat-45 has been used widely in research and results generally support its validity (see e.g., Proyer, Platt, & Ruch, 2010; Renner & Heydasch, 2010; Samson & Meyer, 2010). The alpha-coefficients in this sample were .88 (gelotophobia) and .89 (gelotophilia and katagelasticism).

The *Orientation to Happiness* scale (OTH; Peterson et al., 2005) is a questionnaire for the subjective assessment of *life of pleasure* (a sample item is "Life is too short to postpone the pleasures it can provide"), *life of engagement* ("I am always very absorbed in what I do"), and *life of meaning* ("I have a responsibility to make the world a better place"). Each scale consists of six items. It utilizes a 5-point answer format (1 = *very much unlike me*, 5 = *very much like me*). The German version of the OTH was used (Ruch et al., 2010). The OTH and its German-language variant have been used in a broad

range of studies and proved to be a valid and reliable measure (e.g., Chen et al., 2010; Peterson et al., 2007; Proyer, Annen et al., 2012; Proyer, Ruch & Chen, 2012; Vella-Brodrick et al., 2009). The alpha-coefficients in this sample were .68 (E), .75 (P), and .77 (M), respectively.

The *Satisfaction with Life Scale* (SWLS; Diener et al., 1985) is a five-item measure for assessing satisfaction with life. A sample item is "The conditions of my life are excellent". It uses a 7-point answer form (1 = *strongly disagree*, 7 = *strongly agree*). We used a German translation of the scale that had proved its usefulness and good psychometric properties in previous studies (e.g., Peterson et al., 2007; Proyer, Ruch, & Chen, 2012; Ruch et al., 2010). The alpha-coefficient in this sample was .81.

Procedure

Students attending a course on psychometrics collected the data. They were asked to distribute fifteen questionnaires each among adults (with an about equal number of males and females). The data collection was part of the course requirements. Participants were not paid for their services and were informed that they should complete the questionnaire for helping with a scientific study.

Results

An inspection of skewness and kurtosis of all scales that entered the study indicated that they were normally distributed. Means and standard deviations were comparable to data collected in earlier studies with the respective instruments. Pearson correlation coefficients were computed between the total score on the *Adult Playfulness Scale* as well as its five dimensions with measures of personality, orientations to happiness, satisfaction with life, dispositions towards ridicule and being laughed at as well as demographics (sex, age, educational level, and working status).

Table 1 shows that playfulness as operationalized in the APS could well be located in the framework of the big five. Greater playfulness was associated with emotional stability, openness to new experiences, extraversion, and low conscientiousness. Out of the three orientations towards happiness, playfulness correlated primarily with the pleasurable life but also the life of engagement. Playfulness was unrelated to an overall estimation of the satisfaction with life. Furthermore, greater playfulness was associated with lower fear being laughed at. However, it was related to the enjoyment of being laughed at and joy in laughing *at* others. Demographics were widely unrelated with playfulness but playful people tended to be younger.

These relations were also stable in parts among the five dimensions of playfulness but additionally, they yielded different relations that should be highlighted. For example, those who expressed fun and low silliness in their playfulness were also higher in agreeableness. Those who were higher in the creative aspects of playfulness endorsed culture

Table 1:
Correlations Among (Facets of) Playfulness and Measures of Personality, Orientations to Happiness, Satisfaction with Life, and Dimensions towards Being Laughed at and Ridicule

	Spontaneous	Expressive	Fun	Creative	Silly	Total
Personality						
ES	.19*	.07	.27*	.37*	-.11	.20*
A	-.03	.02	.21*	.15	-.22*	.02
Cu	.25*	.27*	.34*	.65*	.07	.40*
E	.44*	.59*	.41*	.36*	.18*	.53*
Co	-.42*	-.16*	-.15	.23*	-.52*	-.30*
Happiness						
Pleasure	.32*	.31*	.16	.13	.36*	.34*
Engagement	.23*	.21*	.11	.23*	.12	.24*
Meaning	.09	.10	-.04	.14	.11	.11
Life satisfaction	.13	.10	.31*	.18*	-.10	.15
Laughter						
Gelotophobia	-.25*	-.10	-.34*	-.22*	.01	-.24*
Gelotophilia	.44*	.27*	.23*	.04	.39*	.38*
Katagelasticism	.33*	.20*	-.01	-.06	.40*	.25*
Demographics						
Sex	-.06	.10	.10	.05	-.08	.03
Age	-.29*	-.22*	-.14	.03	-.43*	-.31*
Education	.05	.11	.15	.18*	-.05	.10
Working	-.03	-.06	.10	.03	-.09	-.02

Note. n = 163-180. Personality = MRS-45 (ES = Emotional Stability, A = Agreeableness, Cu = Culture, E = Extraversion, Co = Conscientiousness); Happiness = OTH (Life of Pleasure, Life of Engagement, Life of Meaning); Life satisfaction = SWLS; Laughter = PhoPhiKat-45; sex (1 = male, 2 = female), education (1 = no school to 8 = doing a or having a Phd), working (1 = yes, 2 = no).

* $p < .05$.

strongly (r^2 = .42) and were higher in emotional stability than others but they also yielded (in contrast to the other dimensions) a positive relation to conscientiousness. Those who liked spontaneous and silly expressions of playfulness were lowest in conscientiousness (r^2 between .18 and .27). Higher satisfaction with life was reported from those who pursued fun and creative playfulness. Enjoying to be laughed at by others and to laugh at others was primarily found among those who prefer *spontaneous* and *silly* variants of playfulness. Finally, the latter and *expressive* forms of playfulness were primarily found among younger participants.

Predicting playfulness. A multiple regression was computed (not reported in full detail here) with the total score of the APS as criterion and age along with the other scales as predictors. In a first step, age was entered in the regression and in a second step, personality, the dispositions towards ridicule and being laughed at, the orientations to happiness, and satisfaction with life were added (*stepwise*) to the equation. The analysis yielded a multiple correlation coefficient of .57 (F[6, 153] = 32.96, p = .000). In the final model, age did not contribute to the prediction. Extraversion entered the equation first (ΔR^2 = .25; final model: β = .40, p = .000), followed by low conscientiousness (ΔR^2 = .10; β = -.42, p = .000). Then culture (ΔR^2 = .09; β = .34, p = .000), gelotophilia (ΔR^2 = .02; β = .17, p = .004), and agreeableness entered (ΔR^2 = .01; β = .13, p = .044). When doing the regressions separately for each of the predictors (for an estimate of the individual contribution of these predictors), there was a multiple correlation coefficient of R^2 = .59 for personality (F[8, 147] = 24.71, p = .000) with extraversion (β = .46) entering first followed by conscientiousness (β = -.46), culture (β = .33) and agreeableness (β = .13; all coefficients for the final model). The three dispositions towards ridicule and being laughed at yielded an R^2 = .26 (F[6, 150] = 8.52, p = .000) with gelotophobia (β = -.35) entering the equation first followed by katagelasticism (β = .29). Finally, the three orientations to happiness yielded a R^2 of .21 (F[5, 147] = 7.35, p = .000). In this analysis, younger age contributed significantly to the prediction of playfulness (β = -.25) followed by the pleasurable life (β = .32)[2].

Discussion

The results of the study converged well with the predictions derived from Barnett's (2007) definition of playfulness. Playfulness was most strongly related to extraversion, low conscientiousness, and higher endorsements to culture. Also, gelotophilia and agreeableness were predictive in a regression analysis – yet with a low incremental contribution to the prediction. Hence, they seem to be of lower practical relevance. Also, emotional stability (ES) seemed to be of lesser importance, though correlations point in a direction of higher ES in playful adults. Neither demographics nor fearing to be laughed at (gelotophobia) or enjoying laughing at others predicted playfulness.

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[2] The pattern of correlations given in Table 1 suggested that each of the single dimensions of the APS related somewhat differently to the variables tested in this study. Therefore, regressions were conducted with each of the five scales of the APS as criterion and the same specifications as described above. The results are not shown in detail here but suggest that mainly conscientiousness along with extraversion and culture turned out to be potent predictors; *spontaneous playfulness* (R^2 = .51, F[6, 153] = 13.51, p = .000; most important predictors in the final model: Culture [β = .51] and extraversion [β = .34]); *expressive playfulness* (R^2 = .46, F[9, 140] = 15.55, p = .000); most important predictors: extraversion [β = .60] and emotional stability [β = .26]); *fun-oriented playfulness* (R^2 = .40, F[7, 151] = 15.39, p = .000; most important predictors: Conscientiousness [β = -.40], extraversion, agreeableness, culture and life satisfaction with beta-weights between .25 and .29); *Creative playfulness* (R^2 = .53, F[3, 151] = 54.63, p = .000; predictors were age [β = .17], culture [β = .67] and extraversion [β = -.17]); and *silly*-variants of playfulness (R^2 = .48, F[4, 153] = 33.75, p = .000; predictors were age [β = .20], conscientiousness [β = -.40], life of pleasure [β = .25], and katagelasticism [β = -.19]).

At the level of bivariate correlations, the pleasurable life as well as an engaged life demonstrated robust relations with adult playfulness. There was an overlap of 21 % in the variance of the three orientations to happiness with playfulness. These findings are in accordance with the predictions. Hence, hedonism as well as engagement (related to flow-experiences) are associated with playfulness in adults. This seems crucial, as it could be a hint towards a positive impact of playfulness in everyday life. Pending further studies one might discuss whether fostering playfulness in adults (cf. McGhee, 1996, 2010) could be a strategy for boosting flow-related experiences, which, in turn, could have a positive impact on a person's subjective well-being. However, this is at the level of speculations at the moment.

Silly variants of playfulness (childlike, whimsical, frivolous, unpredictable) were primarily predicted by low conscientiousness, the pleasurable life (hedonism) and lower enjoyment of laughing at others. Based on these data, it can only be speculated whether a less ordered environment allows for (silly) playful behavior or whether playfulness leads to less conscientious behavior (or what kind of interaction there may be). However, it seems worth following this line of research. Especially, it would be interesting to know whether this lower expression of conscientiousness in playful adults generalizes into all areas of their life (e.g., leisure time, work time, relationships etc.) or whether this is restricted to specific areas and tasks (e.g., those that are less challenging or pursued just for fun). In study 2, the relations of adult playfulness with intrinsic and extrinsic life goals were tested.

Study 2

Method

Sample. The sample consisted of 268 adults. Two were 17 years old and the others were between 18 and 65 (M = 29.0, SD = 9.1). Slightly more than one quarter were males (n = 69; 25.7 %). More than a third (n = 94; 35.1 %) held a degree from university or were currently students, while 48.9 % (n = 131) had a degree from school that would allow them to study. About one fifth (n = 55; 20.5 %) reported being married.

Instruments

The *Short Measure of Adult Playfulness* (SMAP; Proyer, 2012) is a five-item questionnaire for the assessment of playfulness in adults. It was developed for providing a global, cognitive self-description of playfulness. A sample item is "I am a playful person". Higher scores in the SMAP indicate an easy onset and high intensity of playful experiences along with the frequent display of playful activities. The five items are positively keyed. Answers are given on a 4-point answer format (1= *strongly disagree*, 4 = *strongly agree*). Proyer reports best fit for a one-dimensional solution of the data (in exploratory and confirmatory factor analyses) and high internal consistencies (≥ .80 in three different samples). Also, data on the convergent validity (three other indicators of playfulness),

divergent validity (with a seriousness scale), and a more experimental task (ratings for workplaces and pieces of art) support the overall validity of the instrument. The alpha-coefficient in this study was .86.

As in Study 1, the *Adult Playfulness Scale* (APS; Glynn & Webster, 1992) has been used. Alpha-coefficients in this sample were .74 (*spontaneous*); .66 (*expressive*); .65 (*fun*); .66 (*creative*); and .69 (*silly*).

The *Aspirations Index* (AI; Kasser & Ryan, 1993, 1996; in the German version by Klusmann, Trautwein, & Lüdtke, 2005) assesses the *importance* ("How important is this to you?") and the *likelihood* ("How likely is it that this will happen in your future?") with 35 items each. Answers are given on a 4-point answer scale (1 = *not at all important*/*very unlikely*, 4 = *very important*/*very likely*). The AI measures *intrinsic* (i.e., personal growth, affiliation, community contribution, physical fitness) and *extrinsic* (i.e., financial success, attractive appearance, fame) aspirations. A sample item is "To have good friends whom you can count on" (affiliation). Total importance and likelihood scores were computed by averaging ratings across the seven domains. The German Version by Klusmann et al. (2005) demonstrated high internal consistencies (mean Cronbach Alpha = .79) and high four-week test-retest correlations (mean = .79 for the importance and .78 for the likelihood). The AI is widely used in research supporting its validity (e.g., Auerbach, et al., 2010; Kasser, 1996; Kasser & Sheldon, 2000). The alpha coefficients in this sample were satisfactory, with a median of .82 that ranged from .64 to .87.

Procedure. Data for this study has been collected online. The website was hosted by the institution in which the study has been conducted. The study was advertised by means of leaflets handed out at public transport stations and via mailing lists. Additionally, it was posted in several online forums of general interest. Participants were not paid for their services but received a feedback upon request after completing all questionnaires.

Results

When computing bivariate correlations between adult playfulness and life aspirations (not reported here in detail), primarily intrinsic goals demonstrated relations (e.g., greater likelihood of personal growth correlated with all variants of playfulness except for silly playfulness; r^2 were between .02 and .20). The fun-variants of playfulness also correlated robustly with the expectation for affiliation (r^2 = .19) and for physical fitness (r^2 = .12). Overall, these analyses argue for a relation of intrinsic goals to playfulness but also to a relation towards a positive expectancy that (intrinsic and extrinsic) goals will materialize. These analyses, however, might be biased because of a generally high or low overall conviction that goals are important or that it is likely that goals can be achieved. Thus, the analysis of the relation between playfulness and goal aspirations was based on a different approach. Regression analyses were performed with playfulness (general playfulness but also its variants) as criteria. In these analyses, playfulness was regressed onto the overall importance or likelihood of aspirations at Step 1; i.e., total scores were computed for the endorsement towards the importance and likelihood of goals (overall im-

portance/likelihood). At Step 2, the semipartial for the importance of intrinsic aspirations was tested by entering either the importance or likelihood of intrinsic or extrinsic goals into the equation. Kasser and Ryan (1993, 1996) argue for this strategy of analyzing the data as it controls "variance due to having generally high importance or likelihood ratings" (1996, p. 283).

Table 2 contains the standardized regression coefficients. It shows that facets of adult playfulness were robustly associated with intrinsic and extrinsic goals. Overall playfulness (SMAP) existed independently from goals but there were significant relations with the likelihoods of achieving goals. Expressive (e.g., bouncy, open) and fun (e.g., bright, excitable) variants of playfulness were related with greater overall importance and likelihood of goal achievement. Both, the importance but also the likelihood of extrinsic goals were negatively associated with these two forms of playfulness. This was particularly evident for the likelihood of extrinsic aspirations and fun-variants of playfulness. Thus, pursuing fun-variants of playfulness yielded relations with intrinsic aspirations only. High likelihoods for intrinsic aspirations were associated with both forms of playfulness while only fun-related playfulness demonstrated significant relations towards greater intrinsic importance of aspirations. Greater spontaneous and creative playfulness demonstrated significant relations with greater likelihood of aspirations – and creative playfulness demonstrated associations towards a greater likelihood of intrinsic and a lower likelihood of extrinsic goals. Silly and spontaneous playfulness existed independently from life goals.

Table 2:
Regression of Intrinsic and Extrinsic Goals on (Facets of) Adult Playfulness (n = 263)

	SMAP	**Adult Playfulness Scale**				
	Playfulness	***Spontaneous***	***Expressive***	***Fun***	***Creative***	***Silly***
Importance						
Step1						
Overall	.07	.02	.16*	.16*	.06	.02
Step 2						
Intrinsic	-.03	-.02	.15	.31*	.11	-.12
Extrinsic	.04	.03	-.24*	-.48*	-.17	.18
Likelihood						
Step1						
Overall	.15*	.14*	.14*	.37*	.29*	.06
Step 2						
Intrinsic	.10	.12	.21*	.59*	.17	-.02
Extrinsic	-.13	-.16	-.29*	-.81*	-.24*	.03

Note. Standardized regression coefficients. SMAP = Short Measure for Adult Playfulness.

*$p < .05$.

Discussion

This study shows that playfulness in adults is associated with intrinsic goals. At the level of bivariate correlations, the perceived likelihood for personal growth correlated with all variants of playfulness and a global, cognitive evaluation of playfulness. The same was true for aspirations towards good relations, which yielded robust relations with expressive, fun, and creative variants of playfulness. It can be speculated that people who experience themselves as playful, report higher inclination towards the pursuit of intrinsic goals.

However, not only intrinsic goals demonstrated positive relations with playfulness. There were also robust relations between extrinsic aspirations towards fame and the likelihood of attractiveness and greater creative and fun-variants of playfulness. However, these seemed to have been of less relevance at the content level. This variant of playfulness yielded the strongest relations with life goals. The silly-forms existed unrelated from intrinsic and extrinsic aspirations in all of their components. It is argued that silly-playfulness is exhibited for immediate pleasure and fun but not for satisfying intrinsic (or extrinsic) needs.

One of the main findings of this study is that greater playfulness relates robustly to a greater expectation of the likelihood that aspirations can be achieved – again, except for silly-variants. Expressive and fun-variants were also predicted, beyond the level of a general tendency to think of aspirations as being important, by higher intrinsic and lower extrinsic likelihood. Greater expressive and fun-related playfulness can also be described by higher intrinsic and lower extrinsic importance of aspirations (if controlled for the overall contribution of the importance ratings). Low extrinsic likelihood yielded the greatest regression coefficient in all analyses. Proyer (2011) found that greater playfulness in students was positively related to better academic performance but also to the willingness of doing more for an exam than would have been necessary for passing the exam (i.e., doing extra reading). This finding may be explained by an interest in personal growth that facilitates the acquisition of further knowledge. Intrinsic aspirations have been linked to positive evaluations of and views on education among students (Henderson-King, & Mitchell, 2011; Vansteenkiste, et al., 2008). In study 3, playfulness was related to psychometrically measured and self-estimated ingenuity.

Study 3

Method

Sample

The sample consisted of 212 undergraduate students; 34 were males, 139 were women, and 39 did not indicate their gender. Their mean age was 24.8 years (SD = 5.2) and ranged from 20 to 53 years; 40 did not provide information on their age.

Instruments

As in Study 2, the *Short Measure of Adult Playfulness* has been used[3]; the alpha-coefficient in this study was .69. Also, the *Adult Playfulness Scale* has been used and alpha coefficients were .70, .65, .63, .64, and .71 for *spontaneous*, *expressive*, *fun*, *creative* and *silly*-variants of playfulness.

The *Berlin Intelligence Structure Test Version 4* (BIS; Jäger et al., 1997) is an intelligence test-battery based on Jäger's (1982) *Berlin Intelligence model*. This model comprises different levels of generality; on the top is a g-factor for general intelligence. Then *contents* (verbal, figural, and numeric) and *operations* (speed, memory, ingenuity/creativity, and reasoning) are on the next level. Participants in this study completed three subtests of the "ingenuity" factor that represent verbal (v), numeric (n), and figural (f) ingenuity; i.e. (1) *possible uses of objects* (v), where participants have to generate as many different possible uses for an object within a time-span of two minutes; (2) the task of the participants in the subtest *inventing telephone numbers* (n) is to create as many different sequences of phone numbers (based on specific principles) as possible within a time span of one minute and forty seconds; and (3) drawing real objects out of proposed geometrical figures within two minutes and thirty seconds (*combining symbols*; f). For each of these subtests, two scores can be derived; i.e., one that reflects the *fluidity* of the productions (number of productions), and one that represents the *origence* of the productions (how many different or unique solutions were created). The BIS-4 is widely used in research and practice in the German speaking area (e.g., Bucik & Neubauer, 1996).

Measure for self-estimated ingenuity. Participants rated their ingenuity on a scale from *lowest* (0) to *highest* (100) based on a short definition of ingenuity. This approach has already been successfully used in earlier studies (Proyer, 2011; Proyer & Ruch, 2009).

Procedure. Participants were undergraduate students of psychology. The procedure was identical to the one in Proyer (2011). The students completed the instruments in group settings (fifteen to twenty at a time) as part of the requirements of a lecture. For protecting their anonymity, they were allowed to omit information on age and gender. Three higher-grade students with a special training in test administration conducted the testing sessions. Participants first completed the SMAP, the APS and the self-estimate of ingenuity. Then, they started with the tests on the BIS-4 ingenuity. Afterwards, they completed a battery of other tests, which were unrelated to the present study. The whole procedure took about two hours of testing time (including breaks).

Results

Preliminary analyses. In comparison to the norm of people of similar age, the participants demonstrated average ingenuity with respect to the origence of the productions (figural: mean standard scores = 102; verbal: mean standard scores = 98) but were below

[3] As the final version of the SMAP was not yet available when this data was collected, the version used here consisted only of four out of the five items of the final version of the scale.

average to average in numeric ingenuity (mean standard scores = 88). The median of the self-estimates of ingenuity was above average; i.e., 66.14 on a scale from 0 to 100. This score significantly exceeded the midpoint of the scale (50) that indicated *average* ingenuity, $t(208) = 11.06$, $p = .000$.

Scores for origence and fluidity in the BIS-4 correlated between .41 (numeric) and .79 (figural ingenuity). The two total scores converged well with .71 (all $p = .000$; $n = 210$) but were considered sufficiently distinct for conducting separate analyses. Self-estimated ingenuity and psychometric ingenuity correlated with .06 and .12 for the total scores (fluidity/origence); and with .05/.13, -.04/-.02, and .13/.17 with verbal, numeric, and figural ingenuity (all *n.s.*, except for figural ingenuity, origence, $p = 0.013$; $n = 210$-212).

The relationship between self-estimated and psychometrically measured ingenuity. Correlations between the various indicators of playfulness and ingenuity were computed. Also, partial correlations controlling for demographics and the method used (either self-estimates or the psychometric test) were computed. Finally, correlations of playfulness with difference scores between self-assessment and the psychometric tests were inspected. With respect to the latter, positive correlations would indicate that greater playfulness relates to higher self-estimated than psychometrically tested ingenuity. All correlation coefficients are given in Table 3.

Table 3:
The Relationship between Psychometric and Self-estimated Ingenuity and Adult Playfulness

	SMAP	**Adult Playfulness Scale**				
	Playfulness	***SPO***	***EXP***	***FUN***	***CRE***	***SIL***
Pearson Correlations						
Self-estimates	.26*	.30*	.30*	.21*	.55*	.15*
Fluidity						
Verbal	.13	.18*	.12	.02	.29*	.05
Numeric	.13	.24*	.03	.00	.13	.20*
Figural	.03	.07	.07	.00	.09	-.02
Total	.13	.22*	.10	.01	.22*	.11
Origence						
Verbal	.11	.06	.09	.04	.26*	.03
Numeric	-.03	.15*	-.08	.02	.09	.09
Figural	.07	.12	.10	.00	.11	.03
Total	.07	.16*	.04	.03	.22*	.07
Partial (D)						
Self-estimates	.27*	.26*	.29*	.18*	.51*	.14
Fluidity						
Verbal	.15	.16*	.16*	.06	.28*	.04

	SMAP	Adult Playfulness Scale				
	Playfulness	***SPO***	***EXP***	***FUN***	***CRE***	***SIL***
Numeric	.17*	.26*	.05	.06	.10	.16*
Figural	.05	.14	.14	.04	.09	.03
Total	.16*	.25*	.15	.07	.21*	.11
Origence						
Verbal	.12	-.02	.15	.07	.27*	.03
Numeric	-.08	.11	-.09	.00	.03	.09
Figural	.10	.18*	.16*	.07	.13	.06
Total	.06	.13	.10	.06	.21*	.09
Partial (Method)						
Psychometric-F (S)	.09	.17*	.03	-.03	.13	.08
Psychometric-O (S)	.03	.12	-.01	.00	.15*	.05
Self-estimated (F)	.23*	.26*	.29*	.21**	.54**	.12
Self-estimated (O)	.25*	.27*	.30*	.20**	.54**	.13
Difference scores						
Difference score (F)	.10	.06	.16*	.15*	.26*	.03
Difference score (O)	.14*	.10	.20**	.13	.26**	.06

Note. n = 208-212 (n = 162 for partial correlations with demographics; n = 205 for partial correlations with method; n = 209-212 for difference scores); SMAP = Short Measure of Adult Playfulness; SPO = spontaneous; EXP = expressive; CRE = creative; SIL = silly; verbal, numeric, figural, and total ingenuity (psychometrically measured); Partial (D) = partial correlations controlled for age and gender; Psychometric (S) = correlations between psychometric ingenuity and playfulness controlled for self-estimated ingenuity; Self-estimated (F) = correlations between self-estimated ingenuity and playfulness controlled for fluid aspects of ingenuity; Self-estimated (O) = correlations between self-estimated ingenuity and playfulness controlled for the origence in ingenuity; Difference score (F) = self-estimated ingenuity minus psychometric ingenuity (fluidity; all standardized); Difference score (O) = self-estimated ingenuity minus psychometric ingenuity (origence; standardized); Difference score (FO) = fluidity in ingenuity minus origence in ingenuity (standardized).

* $p < .05$.

Table 3 shows that greater playfulness was associated with higher self-estimated ingenuity with a median of .30 across all facets of the APS. The relation that was numerically highest was found for the creative variants of playfulness (r^2 = .30). Partial correlations indicated that demographics did not contribute strongly to this relation.

The results were less clear for the psychometrically measured ingenuity. Especially spontaneous and creative aspects of playfulness yielded positive correlations with both, fluidity and origence of ingenuity. The numerically highest relation was found between verbal fluidity and creative variants of playfulness (r^2 = .08). A visual inspection of the scatter graph between creative playfulness and psychometric ingenuity indicated that this variant of playfulness could be a necessary but not a sufficient condition for ingenuity (origence)

to occur. Those scoring low in creative playfulness were low in ingenuity (there were no outlying cases) but in the group of highly playful participants, there were both, inventive and non-inventive participants. This was less so for the fluidity of ingenious productions. There were outliers in the upper range of playfulness (towards greater fluidity) but no high scores for those low in playfulness. Figural ingenuity existed irrespective of playfulness. Those exhibiting silly variants of playfulness demonstrated a tendency towards greater numeric fluidity. Demographics did not have a large impact on these relations.

When the self-estimates were controlled for psychometric intelligence (separately for origence and fluidity), the results were stable. Thus, the ability as measured by a psychometric test did not have an impact on the outcomes. However, controlling psychometrically measured ingenuity (origence, fluidity) for the self-estimates yielded results in the same direction but the coefficients decreased numerically. Computing a difference score (self-estimated ingenuity minus psychometric ingenuity; again separately for fluidity and origence) indicated that playfulness was higher among those who *over*-estimated their ingenuity (i.e., higher self-estimated than psychometric ingenuity). Although this was not found for the overall assessment of playfulness, it can (mainly) be seen among the creative (r^2 = .07) as well as the expressive variants of playfulness (though, numerically lower)

Multiple correlation coefficients for all five scales of the Adult Playfulness Scale with the total score for ingenuity (origence/fluidity) were R = .29/R = .34, and R = .18/R = .14, R = .29/R = .34, and R = .28/.36 for figural, numeric, and verbal ingenuity, respectively. Thus, between 2 and 13 % of the variance of psychometric ingenuity could be accounted for by different variants of playfulness (R = .59 for self-estimated ingenuity).

If data were split at the median of the SMAP, there were no significant differences between the groups of high and low playful participants and psychometric ingenuity (origence and fluidity). However, the results indicated that variances were not homogeneous between the two groups for total origence (Levene's test: F = 6.35, p = .012) and figural origence (F = 4.43, p = .036). Variances were homogenous for all fluidity scores except for figural fluidity (F = 4.81, p = .029). In all of these cases, variances were *lower* for the playful participants (above median) indicating more homogenous performances in this group. When analyzing the self-estimated ingenuity in the same way, significant mean score differences and homogeneous variances were found, $t(207)$ = 3.55, p = .000. Mean scores for the group higher in playfulness (M = 68.90, SD = 18.67) exceeded those of the nonplayful ones (M = 59.73, SD = 18.57; d = 0.49).

Discussion

This study provides the first empirical data on self-estimated ingenuity and adult playfulness and allows for comparisons with psychometrically measured ingenuity. The results fit the expectations very well. Overall playfulness relates to higher self-estimates of ingenuity. This was particularly evident for the *creative* (i.e., creative, imaginative, and active) but also the *expressive* (i.e., bouncy, open, animated) and *spontaneous* (i.e., impulsive, free-spirited, adventurous) variants of playfulness. Thus, playful people seem to

be aware of their potential for creative and new productions. One might speculate that this perception is shaped by prior experiences when being able to come up with new and genuine solutions for problems or when excelling in creativity as well as a result of feedback from others. For example, having a reputation in a work group as being able to come up with thoughts that have hitherto not been considered. As part of a future study, the implementation of observer ratings for playfulness and creative performances is suggested, as this information would contribute strongly to the further refinement of these findings.

While the relations to the self-estimates could be interpreted straightforward, results were mixed for psychometrically measured ingenuity. The overall playfulness existed widely independently from ingenuity. However, higher expressions of creative and spontaneous variants of playfulness went along with higher tested ingenuity – numerically higher for fluidity and spontaneous playfulness. The latter finding might be explained by arguing that in order to exhibit spontaneous acts of playfulness, the mere number of productions seems to be of primary importance compared to the quality of the productions. This reflects the impulsive character of this aspect of playfulness. Also the playful adults seemed to be more homogenous in their genuine performances in ingenuity (origence) than the nonplayful adults. More research is needed on the situational conditions that allow playfulness to occur as well as conditions that hinder the exhibition of playfulness in daily life. Overall, specific aspects of playfulness not only seem to be higher in the self-estimates but also in psychometric test scores. The next step in the exploration of these relations would be to examine whether this could be observed in real life situations as well. For example, whether those adults perceived as playful can really produce more creative productions compared to those perceived as nonplayful.

Results also point towards a direction of greater creative but also expressive playfulness among those who *over*-estimated their ingenuity (i.e., higher self-estimates than performance in the psychometric test). Thus, at least for these facets, the self-perception seems to exceed the actual performance. Pending further replication, however, this finding should not be over-interpreted. Overall, there seems to be a stable relation between seeing oneself as being inventive and creative and also being playful. Again, observer ratings would help in disentangling potential biases in the self-perception. Furthermore, it needs to be mentioned that student samples are not the ideal samples for studying playfulness as earlier studies found restricted variances due to the positive relation of playfulness to younger age (see Proyer, 2011, 2012).

General discussion

Based on this set of studies, the prototypic playful adult can be described as being extraverted, low in conscientiousness, open, gelotophilic, agreeable, following intrinsic life goals with extrinsic goals being of low importance (and their likelihood to occur is also lowly valued), an endorsement of a pleasurable and engaged life, and having both a high self-perception of the own ability to be genuine with also a trend towards greater psychometrically measured ingenuity (frequency and origence). Results point towards a

potential of playfulness for eliciting positive emotions in adults and for facilitating the occurrence of flow-experiences. While overall playfulness existed independently from life satisfaction, its fun-variants (e.g., bright, excitable) shared about 10 % of variance with a global evaluation of the cognitive aspects of well-being. It can be speculated that playfulness relates to other indicators of well-being as well; e.g., quality of life (see Proyer et al., 2010), or perhaps, psychological and physical well-being. It needs to be acknowledged, however, that this general discussion is based on a set of three different studies with each of them awaiting further replication.

In a follow-up study, it will be tested whether a sense of mastery, an experience of personal growth, and related variables relate to playfulness. Additionally, experimental studies are needed for testing whether interventions aimed at fostering playfulness may be causally related to enhanced well-being and what facets of well-being may be affected. Findings of the present study are interpreted as first hints towards a beneficial effect of playfulness to well-being in adults that should deserve further attention.

This study tested playfulness in general but also at the level of different facets. These were partially heterogeneous in their relation with external variables. The question of the dimensionality of adult playfulness is discussed as controversial in the literature (see Proyer, in press). Thus, one of the main tasks for future research seems to be to identify facets of adult playfulness and test their predictive validity for specific behaviors. It has been argued earlier that there may be specific facets (e.g., those related to a "darker side" of playfulness or of facets that are more strongly oriented towards intellectual interests) that have not yet been described in full detail (Proyer, in press).

The question arises on what benefits are to be expected from these relations. Of course, more studies are needed to further elaborate on the role of playfulness for creativity but also for adjacent fields such as learning. Kolb and Kolb (2010) describe a case study in which a playful activity in a team created a "ludic learning space" that was reported to promote learning. Proyer (2011) discussed several reasons why academic performance was positively related to academic success. Amongst others, he argued that playful students might have a different way of not only approaching an exam but also preparing for the exam. It is not yet known whether this is manifested through the creation of a ludic environment or whether personality traits play a bigger role – nevertheless, there seems to be a potential for play and playfulness in learning- and work-related settings. It is argued that playfulness may have potential for increasing passion and joy or love of learning in the learners (cf. Russ & Christian, 2011; Proyer & Ruch, 2011). Thus, this research may have practical implications (e.g., in pedagogy or in other applied settings) for conditions that facilitate learning, creative productions in general, and academic achievements.

Although expectations were mainly fulfilled regarding the correlates of adult playfulness, more research is needed on the concept itself. For example, its measurement needs to be further developed. The *Adult Playfulness Scale* (Glynn & Webster, 1992) has been criticized for its theoretical background (play is seen as the opposite of work) and for psychometric reasons (Barnett, 2007; Krueger, 1995). Thus, new measures are needed that are based on a theoretical framework. The *Short Measure of Adult Playfulness* (Proyer,

2011) is seen as a first step towards new instruments. It enables a short evaluation of cognitive aspects of playfulness and it is hoped that it can help stimulating further research in the area. Additionally, a new multi-facetted instrument is needed for being able to differentiate among different variants of playfulness. Barnett's (2007) approach to use focus groups of undergraduate students for collecting characteristics of playfulness in adults can be seen as a first step towards the development of such a theory. In combination with other approaches (e.g., a linguistic analysis of what words are being used in relation with playfulness; a psychometric study involving current measures for playfulness; etc.) and earlier theoretical accounts (e.g., Lieberman, 1977), a new theory could be developed and tested.

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